FACT SHEET

Module 14 ADVERSE CONDITIONS FLASH FLOODS

HOW DO FLASH FLOODS OCCUR?

Flash floods are caused by two key elements, intense rain that falls in a short amount of time. Intensity is the rate of rainfall, and duration is how long the rain lasts. Flash floods generally occur during or right after a severe thunderstorm.

In some cases, small streams a few feet wide by a few inches deep can swell to over 12 feet deep and 80 feet wide in less than five minutes. To put things in perspective, remember that water is one of the most powerful forces of nature. As little as six inches of fast moving water can knock you off your feet. Fast-moving water two feet deep can wash away a vehicle.

If the National Weather Service issues a Flash Flood Warning, or you observe water rising quickly, you should take action immediately.

- Get far away from areas subject to flooding (dips, low spots, canyons, dry creek beds, or along a stream). Seek higher, safer ground.
- Avoid areas near rivers or streams and areas that are already flooded. Roads that are underwater may no longer be intact. NEVER drive through flooded roadways.
- If your vehicle stalls, leave it immediately and seek higher ground. Rapidly rising water may engulf the vehicle and sweep it away.
- Be very careful at night when it is harder to see flood dangers.
- Do not park your vehicle or camp along streams or dry streambeds during threatening conditions.

Topography, soil conditions, and ground cover also play an important role. Flash floods occur within a few minutes or hours of excessive rainfall, a dam or levee failure, or a sudden release of water held by an ice jam. Flash floods can roll boulders, tear out trees, destroy buildings and bridges, and scour out new channels. Flash flood-producing rains can also trigger catastrophic mud slides. You will not always have a warning that these deadly, sudden floods are coming. Most flood deaths are due to FLASH FLOODS.

Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or heavy rains. Floating debris or ice can accumulate at a natural or man-made obstruction and restrict the flow of water. Water held back by the ice jam or debris dam can cause flooding upstream. Subsequent flash flooding can occur downstream if the obstruction should suddenly release.

CLUES TO PROBLEMS

- Water weighs 62.4 lbs. per cubic foot and typically flows downstream at six to 12 miles an hour.
- When a vehicle stalls in water, the water's momentum is transferred to the car. For each foot the water rises, 500 lbs. of lateral force are applied to the car.
- But the biggest factor is buoyancy. For each foot the water rises up the side of the car, the car displaces1,500 lbs. of water making the car weigh 1,500 lbs. less.

WHAT YOU CAN DO

Know your flood risk and elevation above flood stage. Do your local streams or rivers flood easily? If so, be prepared to move to a place of safety. Know your evacuation routes. Keep your automobile fueled; if electric power is cut off, gas stations may not be able to operate pumps for several days.